1st Annual NASA Project Management Conference

Removing Stumbling Blocks to Developing the Critical Path

March 30 & 31 2004

Presented by
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NORTHROP GRUMMAN

Can You Relate?

I can not understand these activity descriptions

My File Won't Open !

Draw the Schedule in Pwr Point. Its too hard to use MS Project

I Had That View Yesterday, Where Did It Go?

Remember This Guy ?

My Earned Value Looks Wrong, The % Complete Seems Low.

IBR In 60 Days?, Ahh!

9000 Activities? How Can I Manage This Schedule?

Agenda

- **Schedule Development Overview**
  - Developing the Critical Path
- **Keeping the Schedule Simple**
  - Limiting the use of Milestones, Summary Activities, and Constraints
  - View, Table, and Filter Organization
  - Short/Descriptive Activity Names
- **Quickly Displaying MS Project Data**
  - 2 Levels of Schedule Summaries
  - Custom View Filtering
- **Calculating Earned Value**
  - Managing Front & Back Loaded Schedules
  - Calculating Data in MS Project
- **Cool Tricks**
  - Restoring Schedule Database using MS Access
  - Numbering Schedule Data Labels using MS Excel
  - Manipulating Task Descriptions using MS Excel

Schedule Development Overview

Scheduling Dependencies

Design & Build Task

Problem:

Contract 1/15/04	
Design	X
Build Proto-Type	X
Provide Analysis	X
Deliver By:	4/1/05

Given:

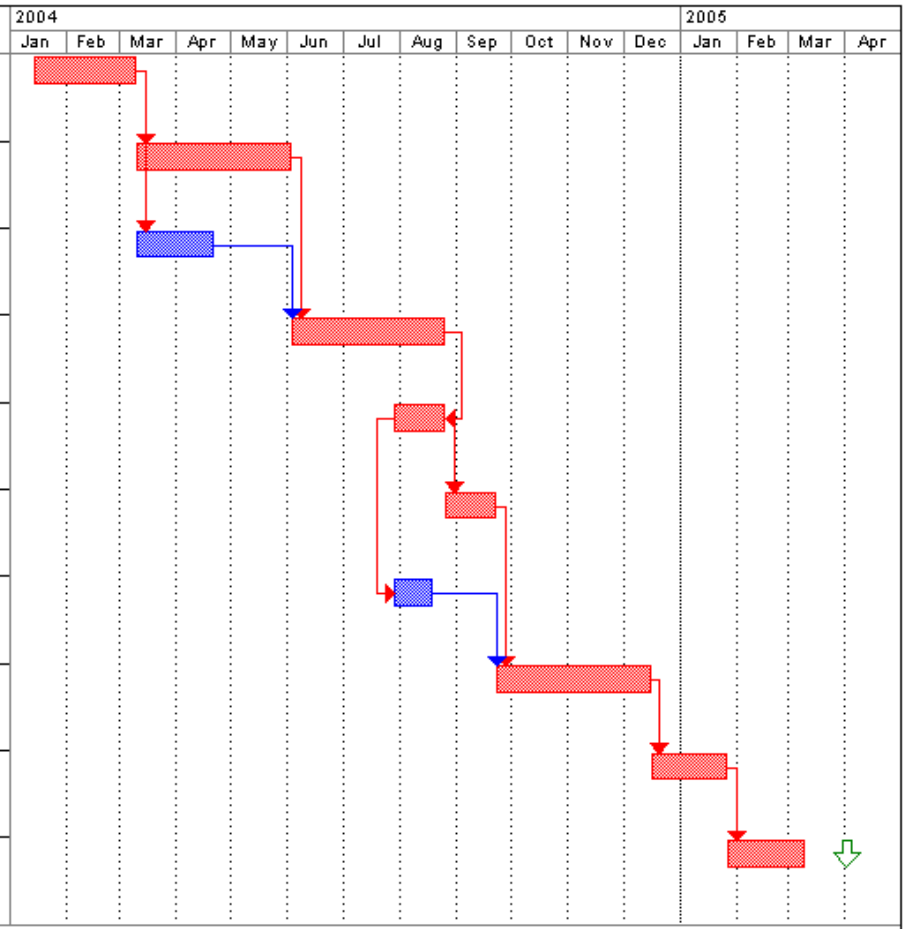
1. Task Starts on 1/15/04
2. Task Needs to Finish By 4/1/05

Task	Duration
1.0 Requirements Analysis	40 Days
2.0 Preliminary Design	60 Days
3.0 Proto-Type Fab & Test	30 Days
4.0 Detail Design	60 Days
5.0 Thermal Analysis	20 Days
6.0 Structural Analysis	20 Days
7.0 Reliability Analysis	15 Days
8.0 Procurement	60 Days
9.0 Fab & Assy	30 Days
10.0 Test & Deliver	30 Days

Schedule Development Overview Con't

Time Phase and Link Activities

ID	Total Slack	Task Name	Duration	Start	Finish
1	17d	Requirements Analysis	40d	1/15/04	3/10/04
2	17d	Preliminary Design	60d	3/11/04	6/2/04
3	47d	Proto-Type Fab & Test	30d	3/11/04	4/21/04
4	17d	Detail Design	60d	6/3/04	8/25/04
5	17d	Structural Analysis	20d	7/29/04	8/25/04
6	17d	Thermal Analysis	20d	8/26/04	9/22/04
7	42d	Reliability Analysis	15d	7/29/04	8/18/04
8	17d	Procurement	60d	9/23/04	12/15/04
9	17d	Fab & Assy	30d	12/16/04	1/26/05
10	17d	Test & Deliver	30d	1/27/05	3/9/05



Schedule Development Overview

Why do we need Early Warning?

Course corrections are easier when you have time to make small adjustments

It's too late when you're this close to the iceberg!

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- **Cool Tricks**
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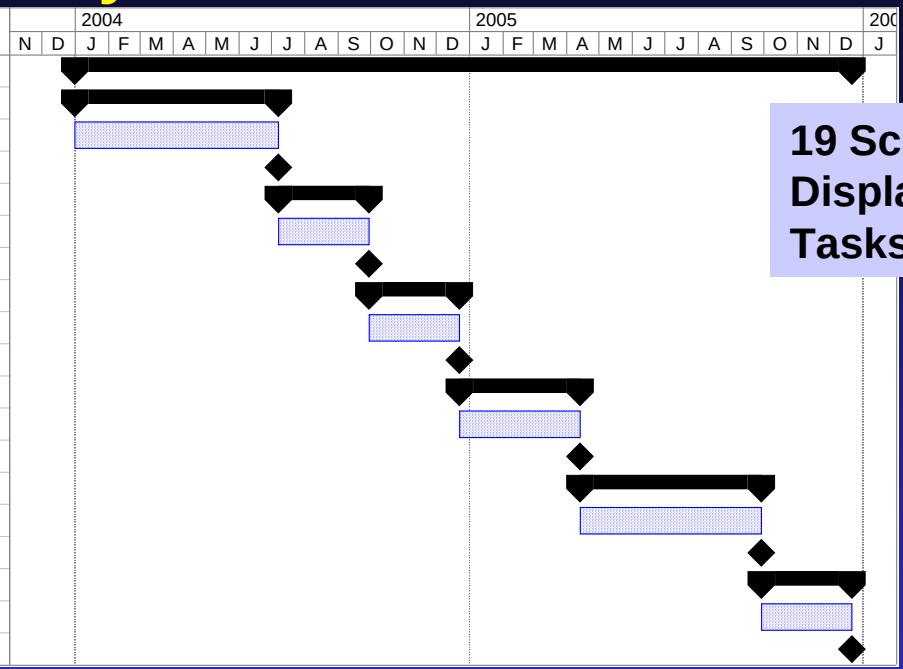
  - Manipulating Task Descriptions using MS Excel

Keeping the Schedule Simple

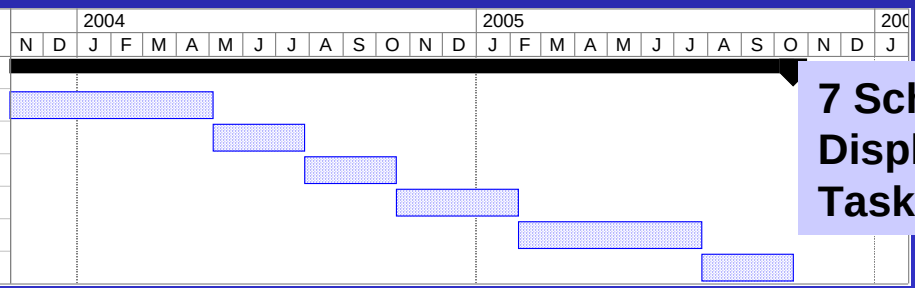
Milestones & Summary Activities

ID	WBS	Task Name	Dur
114	**CABX**	**Module 1**	**515d**
115	**WP 1**	**Requirements Analysis**	**135d**
116	-	Requirements Analysis	135d
117	-	Requirements Analysis Cpt	0d
118	**WP 2**	**Preliminary Design**	**60d**
119	-	Preliminary Design	60d
120	-	Preliminary Design Cpt	0d
121	**WP 3**	**Detail Design**	**60d**
122	-	Detail Design	60d
123	-	Detail Design Cpt	0d
124	**WP 4**	**Drafting & Engineering Release**	**80d**
125	-	Drafting & Engineering Release	80d
126	-	Drafting & Engineering Release Cpt	0d
127	**WP 5**	**Design Verification**	**120d**
128	-	Design Verification	120d
129	-	Design Verification Cpt	0d
130	**WP 6**	**Design Update & Lot 2 Eng Release**	**60d**
131	-	Design Update & Lot 2 Eng Release	60d
132	-	Design Update & Lot 2 Eng Rel Cpt	0d



19 Schedule Lines to Display 6 Real Work Tasks

ID	WBS	Task Name	Dur
114	**CABX**	**Module 1**	**515d**
115	WP 1	Requirements Analysis	135d
116	WP 2	Preliminary Design	60d
117	WP 3	Detail Design	60d
118	WP 4	Drafting & Engineering Release	80d
119	WP 5	Design Verification	120d
120	WP 6	Design Update & Lot 2 Eng Release	60d



7 Schedule Lines to Display 6 Real Work Tasks

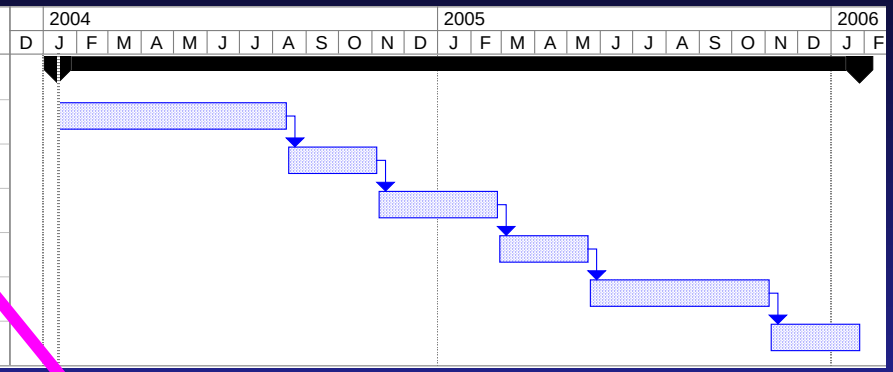
Keeping the Schedule Simple

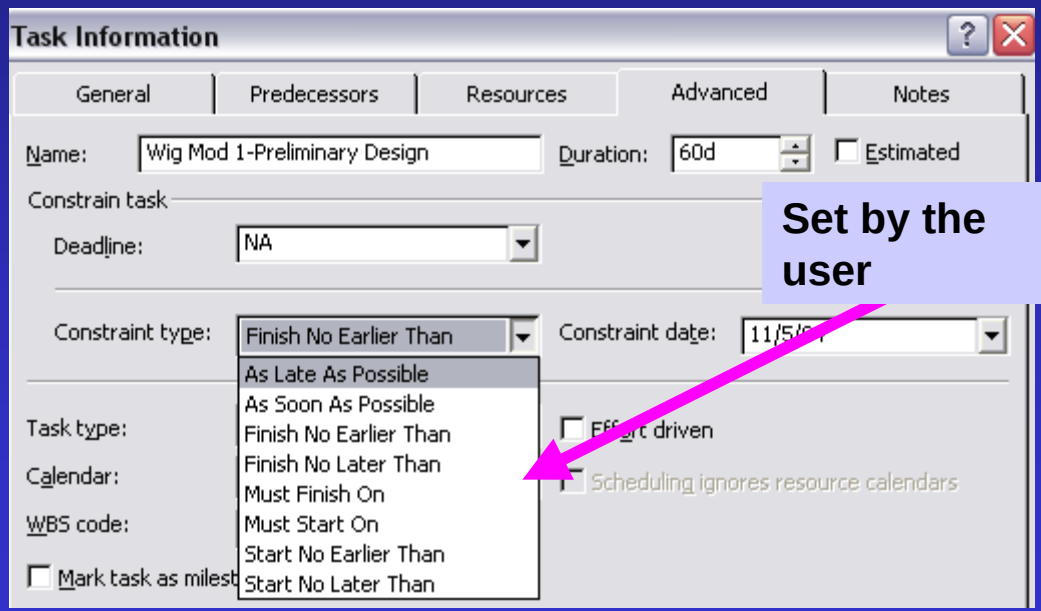
Schedule Constraints

Keeping the Schedule Simple

Schedule Constraints

ID	Task Name	Dur	Constraint Type	Constraint	Start	Finish
1	**Wig Mod 1-Module 1**	**532d**	**As Soon As Possible**	**NA**	**1/15/04**	**1/27/06**
2	Wig Mod 1-Requirements Analysis	152d	Finish No Earlier Than	8/13/04	1/15/04	8/13/04
3	Wig Mod 1-Preliminary Design	60d	Finish No Earlier Than	11/5/04	8/16/04	11/5/04
4	Wig Mod 1-Detail Design	80d	Finish No Earlier Than	1/28/05	11/8/04	2/25/05
5	Wig Mod 1-Drafting & Engineering Release	60d	Finish No Earlier Than	5/20/05	2/28/05	5/ /05
6	Wig Mod 1-Design Verification	120d	Finish No Earlier Than	11/4/05	5/23/05	11/4/05
7	Wig Mod 1-Design Update & Lot 2 Eng Release	60d	Finish No Earlier Than	1/27/06	11/7/05	1/27/06



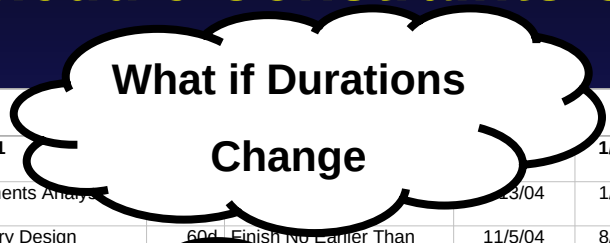


Set when manually inserting Start & Finish dates, many times <u>Unintentionally</u>

Set by the user

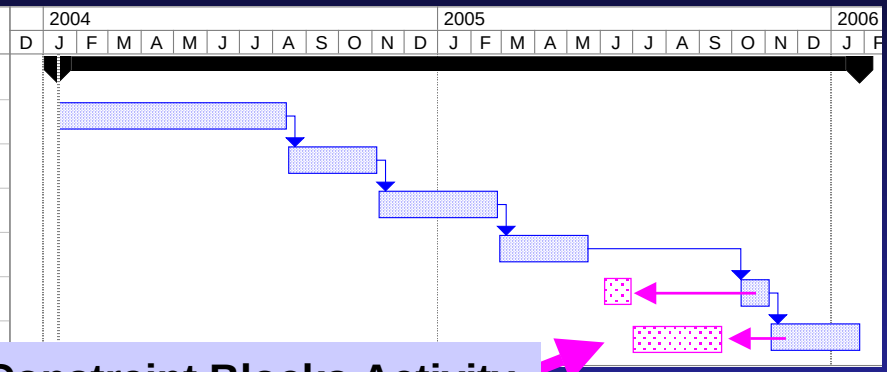
Keeping the Schedule Simple

Schedule Constraints Con't



ID	Task Name			Start	Finish
1	**Wig Mod 1-Module 1**			**1/15/04**	**1/27/06**
2	Wig Mod 1-Requirements Analysis			1/15/04	8/13/04
3	Wig Mod 1-Preliminary Design	60d	Finish No Earlier Than	8/16/04	11/5/04
4	Wig Mod 1-Detail Design	80d	Finish No Earlier Than	11/8/04	2/25/05
5	Wig Mod 1-Drafting & Engineering Release	60d	Finish No Earlier Than	2/28/05	5/20/05
6	Wig Mod 1-Design Verification	120d	Finish No Earlier Than	10/10/05	11/4/05
7	Wig Mod 1-Design Update & Lot 2 Eng Release	60d	Finish No Earlier Than	11/7/05	1/27/06

20d



Constraint Blocks Activity

- **Schedule Tool Can not Calculate Dates**
- **May Lead to Faulty Critical Path Identification**
- **Constraints, Sometimes Hard to Spot, Once Set**

Let The Scheduling Tool Work For You !

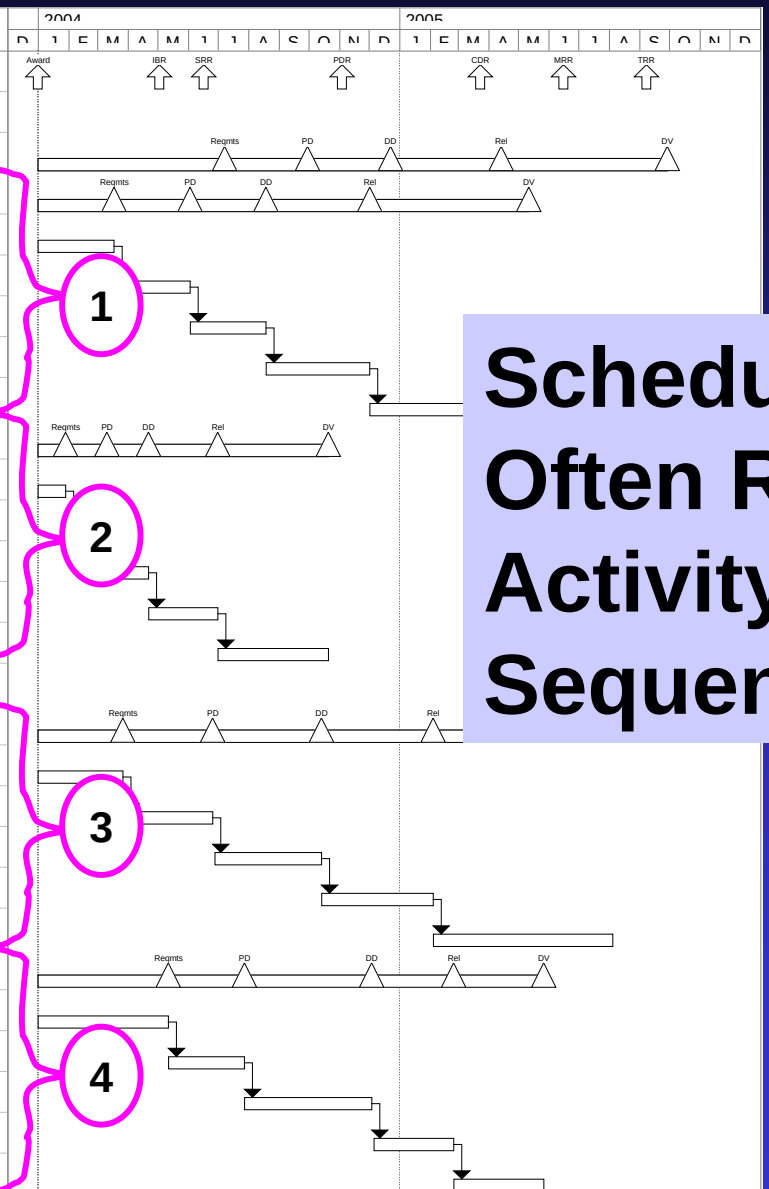
Keeping the Schedule Simple

Short/Descriptive Task Names

Keeping the Schedule Simple

Short/Descriptive Task Names

ID	WBS	Task Name
3	**IMP**	**Program Milestones**
18	**CAXX**	**Widget Devolpment**
19	**CABX**	**Widget - Module 1**
25	**CACX**	**Widget - Module 2**
26	WP 1	Requirements Analysis
27	WP 2	Preliminary Design
28	WP 3	Detail Design
29	WP 4	Drafting & Engineering Release
30	WP 5	Design Verification
31	**CADX**	**Widget - Module 3**
32	WP 1	Requirements Analysis
33	WP 2	Preliminary Design
34	WP 3	Detail Design
35	WP 4	Drafting & Engineering Release
36	WP 5	Design Verification
37	**CBXX**	**GizmoFlotchy Development**
38	**CBBX**	**GizmoFlotchy - Module 1**
39	WP 1	Requirements Analysis
40	WP 2	Preliminary Design
41	WP 3	Detail Design
42	WP 4	Drafting & Engineering Release
43	WP 5	Design Verification
44	**CBCX**	**GizmoFlotchy - Module 2**
45	WP 1	Requirements Analysis
46	WP 2	Preliminary Design
47	WP 3	Detail Design
48	WP 4	Drafting & Engineering Release
49	WP 5	Design Verification



Schedules Often Repeat Activity Sequence

Keeping the Schedule Simple

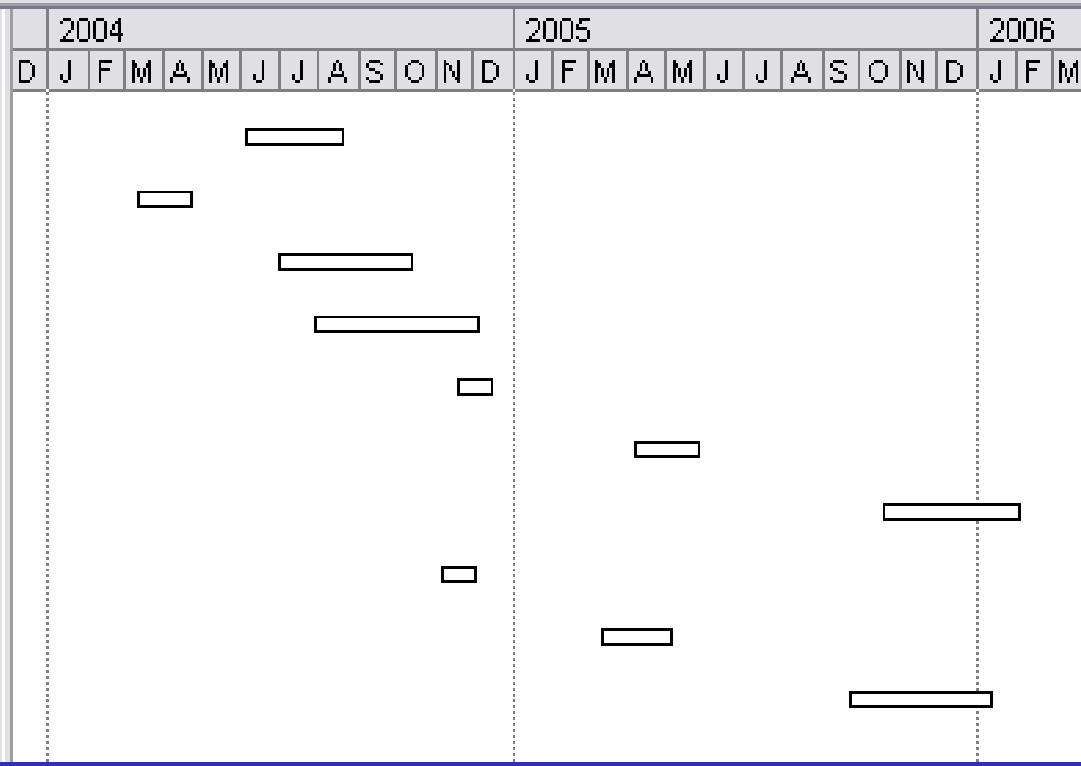
Short/Descriptive Task Names Con't

	WBS	Task Name	Dur	Start	Finish
15	1.3.3	Detail Design	0d	12/22/04	12/22/04
28	WP 3	Detail Design	55d	6/3/04	8/18/04
34	WP 3	Detail Design	30d	3/11/04	4/21/04
41	WP 3	Detail Design	78d	6/28/04	10/13/04
47	WP 3	Detail Design	93d	7/28/04	12/3/04
58	WP 3	Detail Design	20d	11/18/04	12/15/04
64	WP 3	Detail Design	40d	4/4/05	5/27/05
70	WP 3	Detail Design	80d	10/17/05	2/3/06
77	WP 3	Detail Design	20d	11/4/04	12/1/04
83	WP 3	Detail Design	40d	3/10/05	5/4/05
89	WP 3	Detail Design	80d	9/22/05	1/11/06

Look What Can Happen When Detail Design Activities are Selected

Keeping the Schedule Simple
Short/Descriptive Task Names Con't

	WBS	Task Name	Dur
28	WP 3	Wid Mod 2 Det Dsgn	55d
34	WP 3	Wid Mod 3 Det Dsgn	30d
41	WP 3	Giz Mod 1 Det Dsgn	78d
47	WP 3	Giz Mod 2 Det Dsgn	93d
58	WP 3	Wid SW B1 Det Dsgn	20d
64	WP 3	Wid SW B2 Det Dsgn	40d
70	WP 3	Wid SW B3 Det Dsgn	80d
77	WP 3	Giz SW B1 Det Dsgn	20d
83	WP 3	Giz SW B2 Det Dsgn	40d
89	WP 3	Giz SW B3 Det Dsgn	80d



Maintain Short Descriptive Task Names

Keeping the Schedule Simple

Some Guidelines

- **Limit Milestone Activities**
  - Key dates (PDRs, CDRs, Del Dates etc…)
  - When rolling-up to a summary Activity
- **Limit Summary Activities**
  - Sectional Groupings
  - Work Package Headers
- **Limit the use of constraints (Locked Dates)**
  - Starting Activities…….Start No Earlier Than
    Contract Dates…….Finish No Later Than
    Major Milestones…….Must Finish On
- **Keep Task Descriptions Short, but Descriptive**
  - "Prelim Design" -----> Who's Prelim Design

Keeping the Schedule Simple

Views, Tables, & Filters

Keeping the Schedule Simple
Views, Tables, & Filter Organization

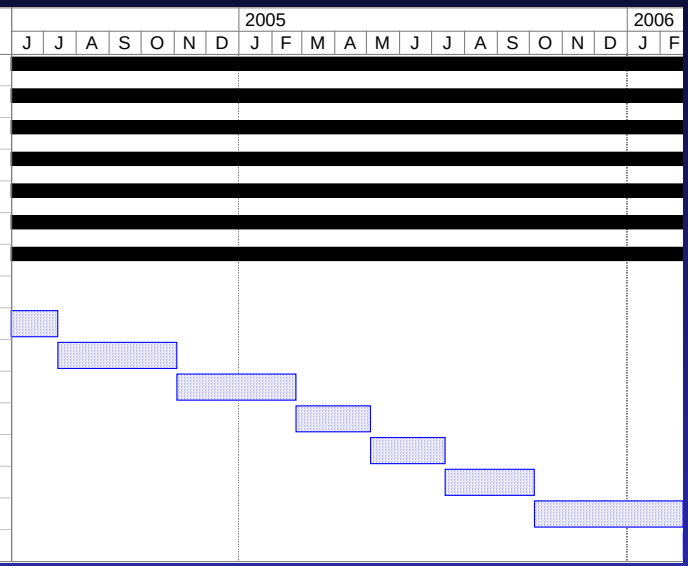
- Schedule Databases tend to become large and overwhelming to use forcing managers to draw their own POWER POINT Schedules.
- View Organization is key to getting program personnel to use the tool.
- Data needs to be Manipulated, Sorted, Filtered, and displayed in a usable fashion or it will tend to be ignored.
- A Customized “View” will select and sort requested data using a prescribed “Filter”, and display the schedule in a user defined “Table”.

Keeping the Schedule Simple

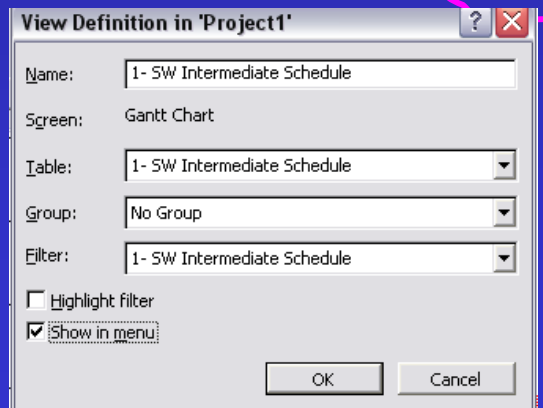
View, Table, & Filter Organization Con't

Activity Selection (Filter) & Sort

ID	Task Name	Dur	Start	Finish
1	**The Big Project**	**796d**	**10/29/03**	**11/15/06**
2	**Program Milestones**	**660d**	**1/1/04**	**7/12/06**
13	**Program Mgmt**	**660d**	**1/1/04**	**7/12/06**
84	**System Engineering**	**706d**	**10/29/03**	**7/12/06**
102	**Hardware Dev**	**660d**	**1/1/04**	**7/12/06**
103	**Widget Dev**	**660d**	**1/1/04**	**7/12/06**
104	**Widget Lead**	**660d**	**1/1/04**	**7/12/06**
105	Initial Planning for IBF	60d	1/1/04	3/24/04
106	SRR P.O.P.	80d	3/25/04	7/14/04
107	PDR P.O.P.	80d	7/15/04	11/3/04
108	CDR P.O.P.	80d	11/4/04	2/23/05
109	MRR P.O.P.	50d	2/24/05	5/4/05
110	TRR P.O.P.	50d	5/5/05	7/13/05
111	1st Del P.O.P.	60d	7/14/05	10/5/05
112	Lot 1 Dels P.O.P.	100d	10/6/05	2/22/06
113	Lot 2 Dels P.O.P.	100d	2/23/06	7/12/06



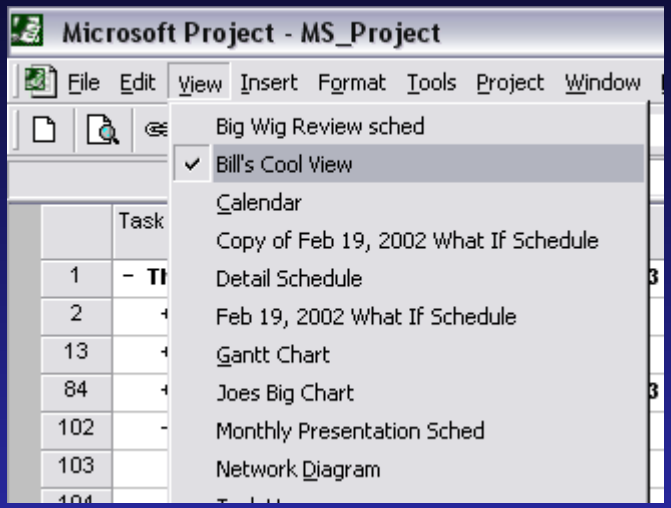
Table

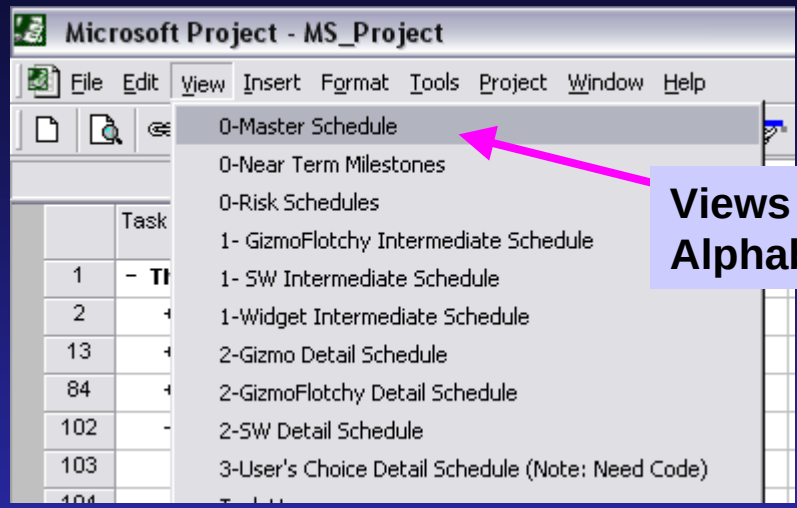


View

Keeping the Schedule Simple

View, Table, & Filter Organization Con't





- Un-Organized
- Confusing View Names
- Time is wasted looking for or Recreating Views

- Organized
- View Names Easy to Understand
- Standard Set of Views; Saves Time

Keeping the Schedule Simple

View, Table, & Filter Organization Con't

- Use Views to Organize Schedule Data into Useful Schedule Information
- Keep Views Simple & Organized
- Use Descriptions That are Easy to Understand
- Name Associated Filters and Tables the Same as the Views
- Create the Templates Views First than Copy and Rename for Detail & Intermediate Schedules

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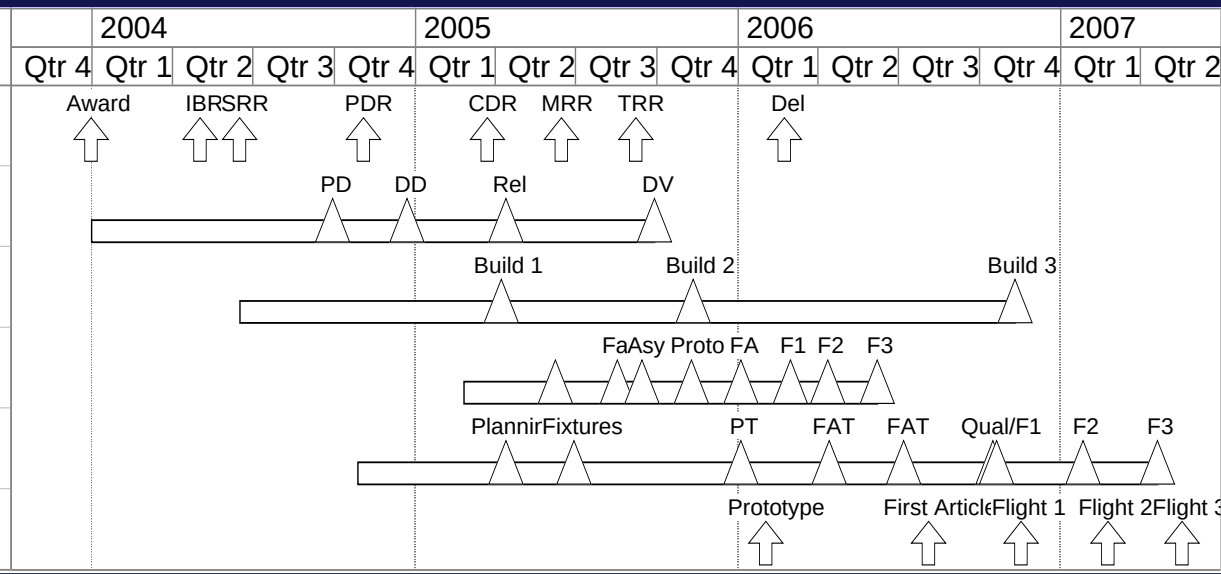
Quickly Displaying MS Project Data

Top Level Schedules

Master Schedule View

ID	WBS	Text30	Task Name
3	IMP	Master,CI,DI,FI	Program Milestones
12	CXXX	Master	Hardware Dev
50	DXXX	Master	Software Dev
92	FXXX	Master	Production
119	GXXX	Master,GI	Integration & Test
148	-	Master,GI,CI,D	Deliveries



Master Schedule Filter

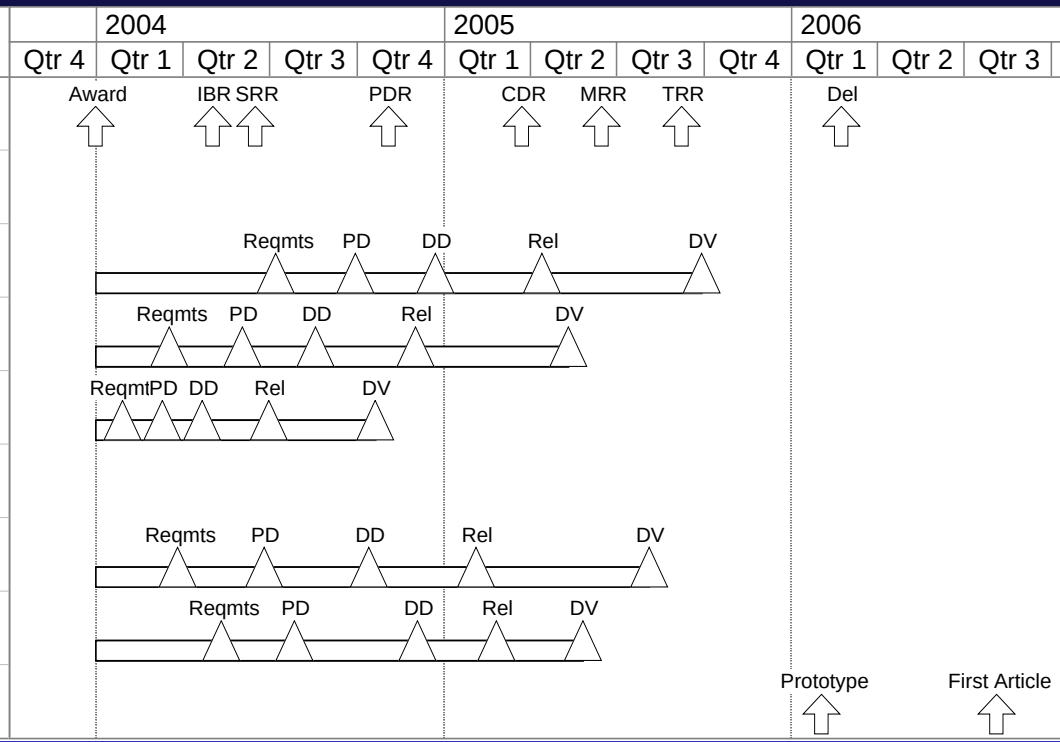
And/Or	Field Name	Test	Value(s)
	Text30	contains	Master

Quickly Displaying MS Project Data

Intermediate Level Schedules

Intermediate Schedule View

ID	WBS	Text30	Task Name
3	**IMP**	**Master,CI,DI,FI**	**Program Milestones**
18	**CAXX**	**CI**	**Widget Devolpment**
19	**CABX**	**CI**	**Widget - Module 1**
25	**CACX**	**CI**	**Widget - Module 2**
31	**CADX**	**CI**	**Widget - Module 3**
37	**CBXX**	**CI**	**GizmoFlotchy Development**
38	**CBBX**	**CI**	**GizmoFlotchy - Module 1**
44	**CBCX**	**CI**	**GizmoFlotchy - Module 2**
148	**-**	**Master,GI,CI,DI,FI**	**Deliveries**

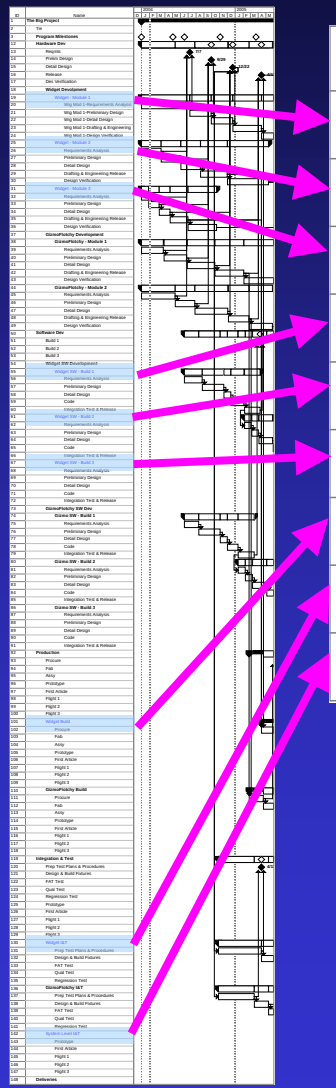


Intermediate Schedule Filter

And/Or	Field Name	Test	Value(s)
	Text30	contains	CI

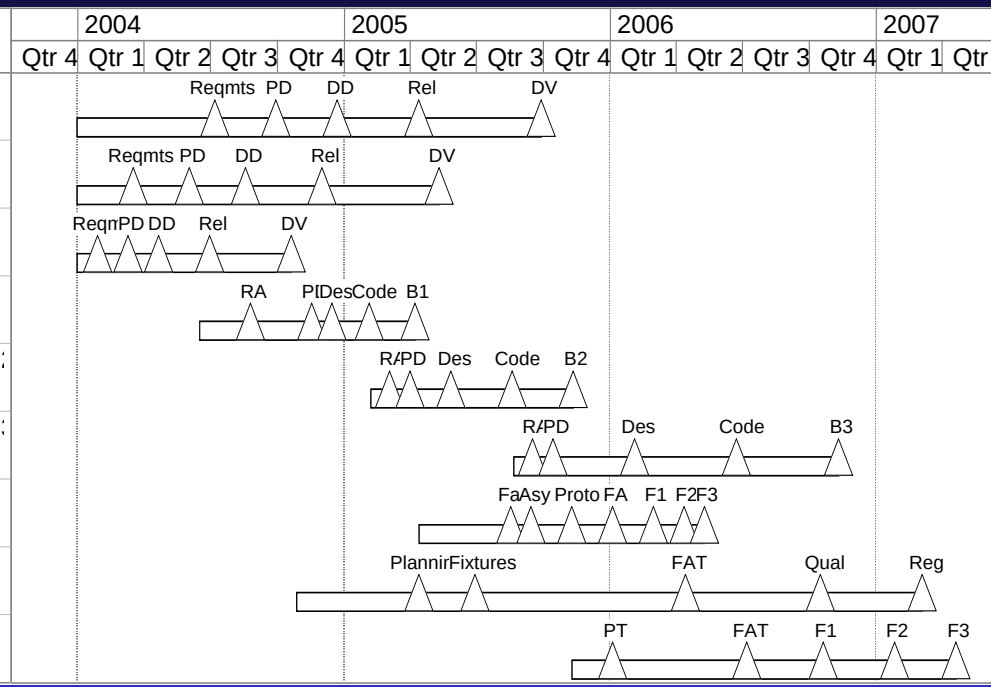
Quickly Displaying MS Project Data Con't

Custom View Filtering

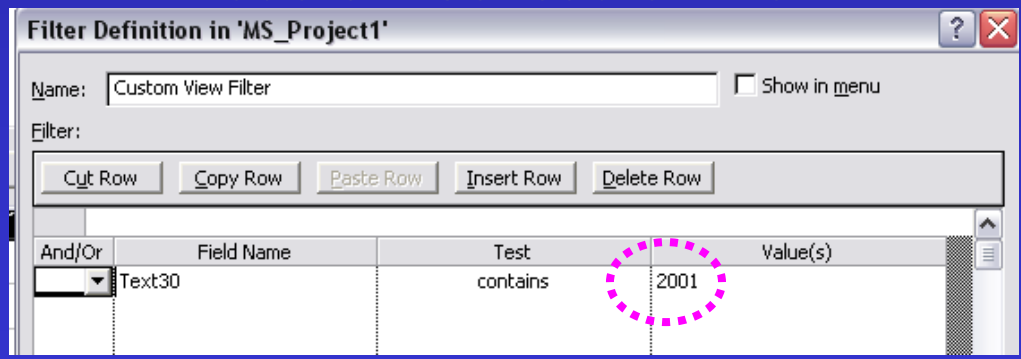


Custom Schedule View

ID	WBS	Text30	Task Name
19	CABX	CI 2001	Widget - Module 1
25	CACX	CI 2001	Widget - Module 2
31	CADX	CI 2001	Widget - Module 3
55	DBAX	DI 2001	Widget SW - Build
61	DBBX	DI 2001	Widget SW - Build
67	DBCX	DI 2001	Widget SW - Build
101	FBXX	FI 2001	Widget Build
130	GBXX	GI 2001	Widget I&T
142	GDXX	GI 2001	System Level I&T



Custom Schedule Filter



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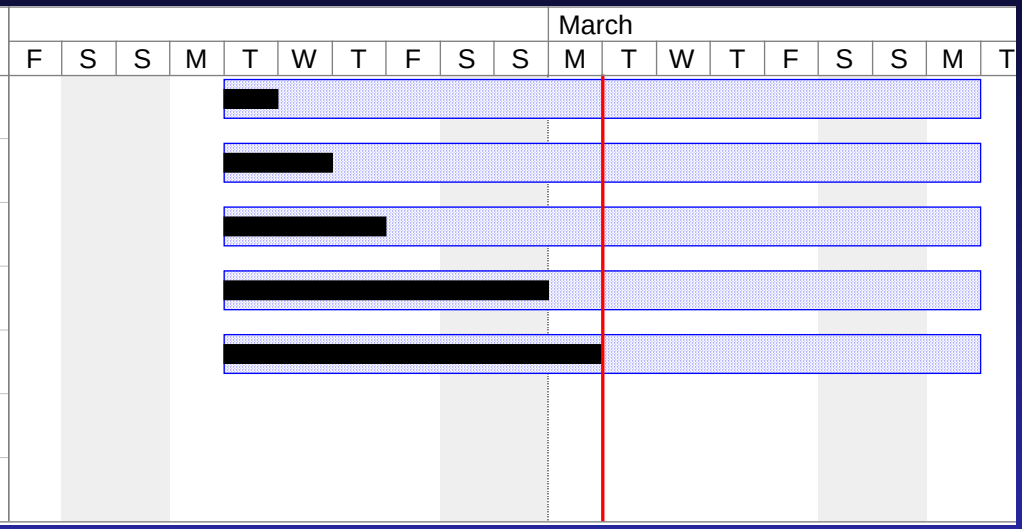
Calculating Earned Value

Weighted Milestones

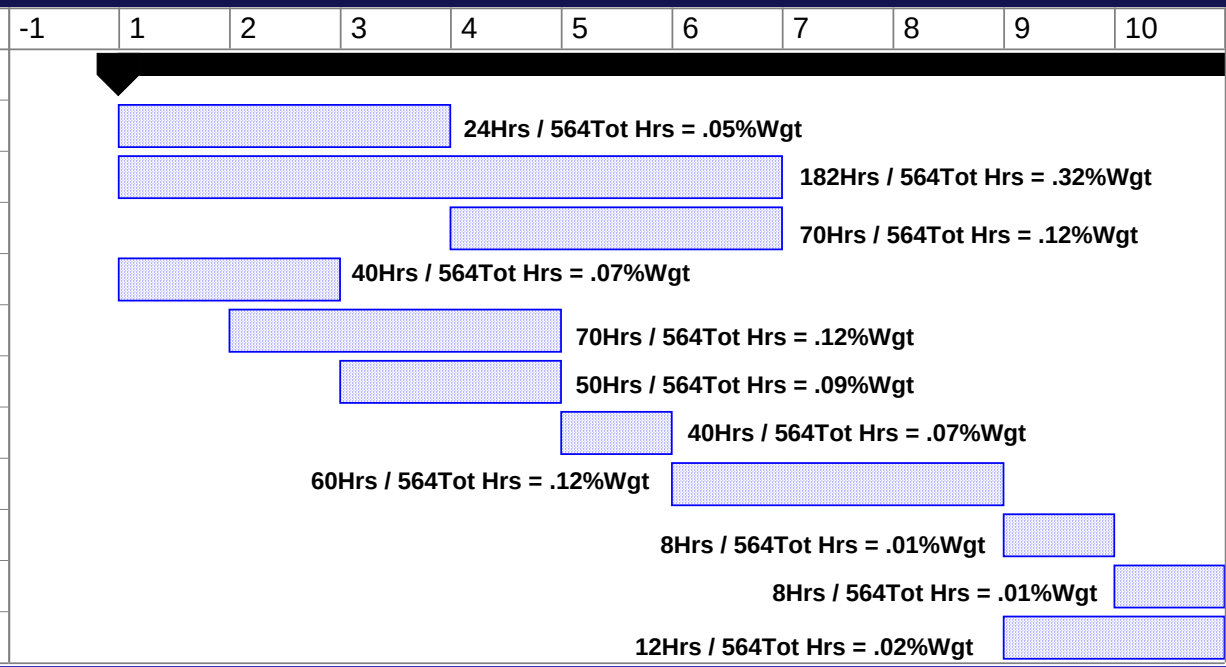
ID	Task Name	Duration	Start	Finish	%
1	Any Ole Task	10 days	2/24/04	3/8/04	10%
2	Any Ole Task	10 days	2/24/04	3/8/04	20%
3	Any Ole Task	10 days	2/24/04	3/8/04	30%
4	Any Ole Task	10 days	2/24/04	3/8/04	40%
5	Any Ole Task	10 days	2/24/04	3/8/04	50%
6					
7					



- MS Project Percent Complete is Based on Duration
- This Works Great if Task is Level Loaded
- What if Activities are Front/Back Loaded?

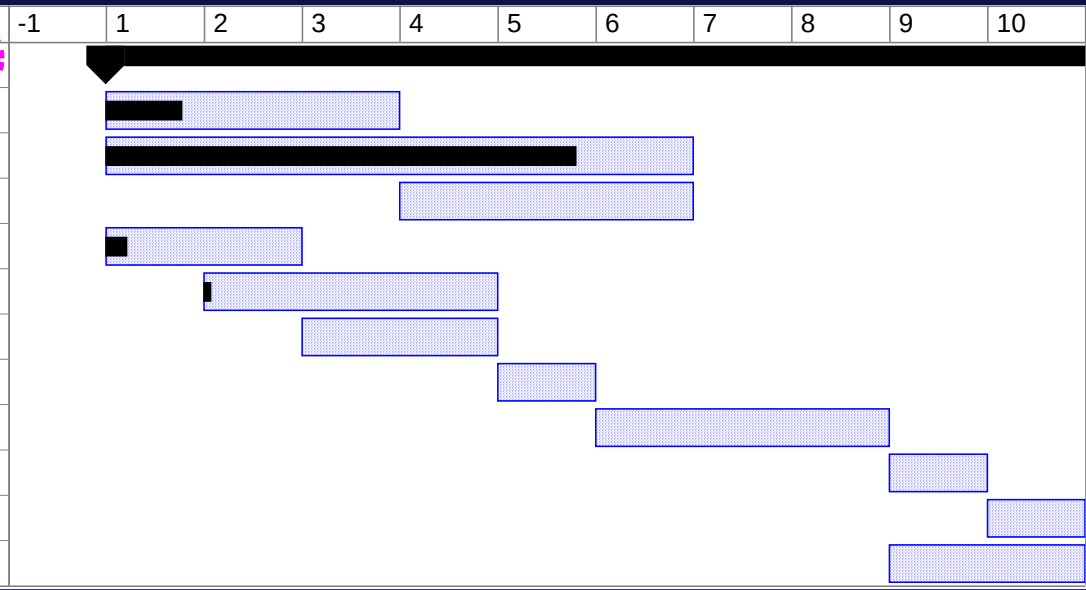
Calculating Earned Value
Weighted Milestones

ID	Task Name	Hours
1	**Widget Detail Design**	**564**
2	PDR Action Items	24
3	Design Routings	182
4	Drafting	70
5	Thermal Analysis	40
6	Structrual Analysis	70
7	Reliability Study	50
8	Eng Review (CDR)	40
9	Artwork	60
10	Final Drafting	8
11	Assy Drawing	8
12	Drawing Package Rel	12



Calculating Earned Value Con't
Progressed Some...

ID	Task Name	WP Wgts	Hrs	%
1	**Widget Detail Design**	**0**	**564**	**22%**
2	PDR Action Items	0.04	24	25%
3	Design Routings	0.32	182	80%
4	Drafting	0.12	70	0%
5	Thermal Analysis	0.07	40	10%
6	Structrual Analysis	0.12	70	2%
7	Reliability Study	0.09	50	0%
8	Eng Review (CDR)	0.07	40	0%
9	Artwork	0.12	60	0%
10	Final Drafting	0.01	8	0%
11	Assy Drawing	0.01	8	0%
12	Drawing Package Rel	0.02	12	0%



Is 22% Complete

Correct ??

Calculating Earned Value Con't

One Way of Calculating EV

File Edit View Insert Format Tools Project Window Help

No Group | All Tasks

Number 11 Field

Widget Detail Design

	ID	Task Name	WP Wgts	%
1	1	− Widget Detail Design	0	22%
2	2	PDR Action Items	0.04	25%
3	3	Design Routings	0.32	80%
4	4	Drafting	0.12	0%
5	5	Thermal Analysis	0.07	10%
6	6	Structrual Analysis	0.12	2%
7	7	Reliability Study	0.09	0%
8	8	Eng Review (CDR)	0.07	0%
9	9	Artwork	0.12	0%
10	10	Final Drafting	0.01	0%
11	11	Assy Drawing	0.01	0%
12	12	Drawing Package Rel	0.02	0%

1. Copy Paste Data into Excel

3. Sum Column

Microsoft Excel - Book6

File Edit View Insert Format Tools Data Window Help

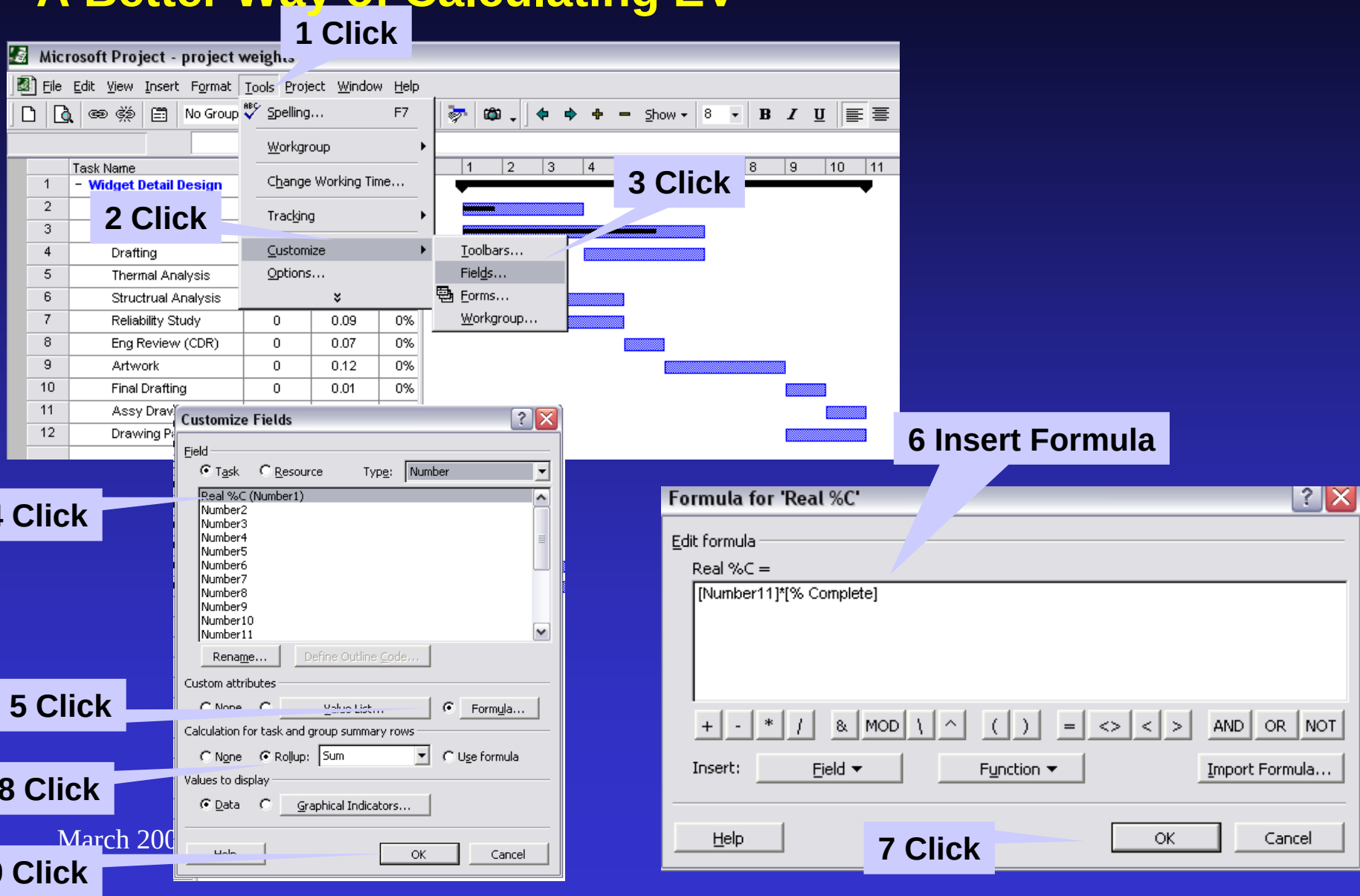
Arial | 10 | B I U | $ %

D19 =

	A	B	C	D	E
1	Task	Wgt	MSP%	EV Equation	Real %C
2	Widget Detail Design	0.00	0.22		0.28
3	PDR Action Items	0.04	0.25	=SUM(B2*C2)	0.01
4	Design Routings	0.32	0.80	=SUM(B3*C3)	0.26
5	Drafting	0.12	0.00	=SUM(B4*C4)	0.00
6	Thermal Analysis	0.07	0.10	=SUM(B5*C5)	0.01
7	Structrual Analysis	0.12	0.02	=SUM(B6*C6)	0.00
8	Reliability Study	0.09	0.00	=SUM(B7*C7)	0.00
9	Eng Review (CDR)	0.07	0.00	=SUM(B8*C8)	0.00
10	Artwork	0.12	0.00	=SUM(B9*C9)	0.00
11	Final Drafting	0.01	0.00	=SUM(B10*C10)	0.00
12	Assy Drawing	0.01	0.00	=SUM(B11*C11)	0.00
13	Drawing Package Rel	0.02	0.00	=SUM(B12*C12)	0.00
14					

Calculating Earned Value Con't

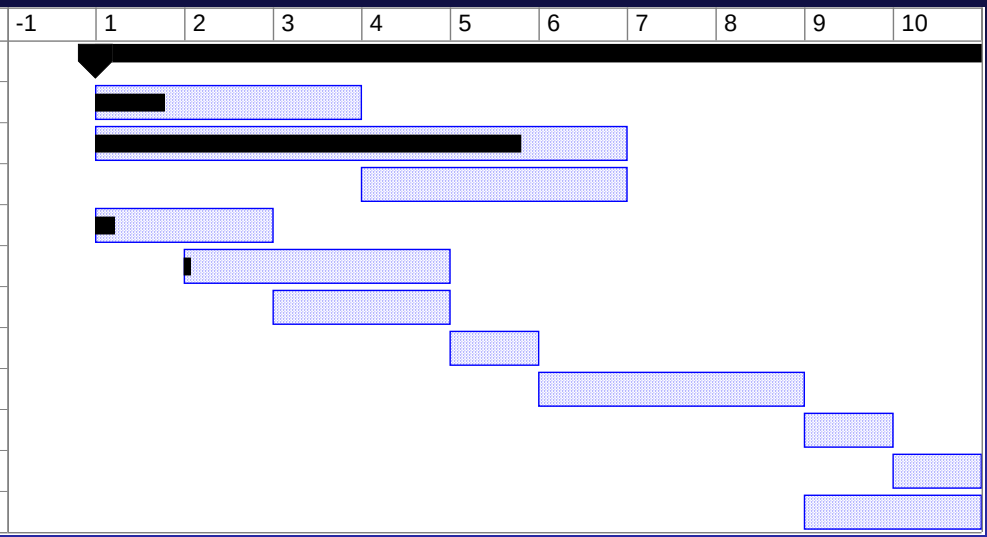
A Better Way of Calculating EV



Calculating Earned Value Con't

The End Result

ID	Task Name	Real % C	WP Wgts	%
1	**Widget Detail Design**	**27.84**	**0**	**22%**
2	PDR Action Items	1.06	0.04	25%
3	Design Routings	25.82	0.32	80%
4	Drafting	0	0.12	0%
5	Thermal Analysis	0.71	0.07	10%
6	Structrual Analysis	0.25	0.12	2%
7	Reliability Study	0	0.09	0%
8	Eng Review (CDR)	0	0.07	0%
9	Artwork	0	0.12	0%
10	Final Drafting	0	0.01	0%
11	Assy Drawing	0	0.01	0%
12	Drawing Package Rel	0	0.02	0%



- **MS Project % Complete is Based on Duration Not Weights**
- **Embedding Equations Directly in MS Project Saves Time and Displays Status More Accurately**

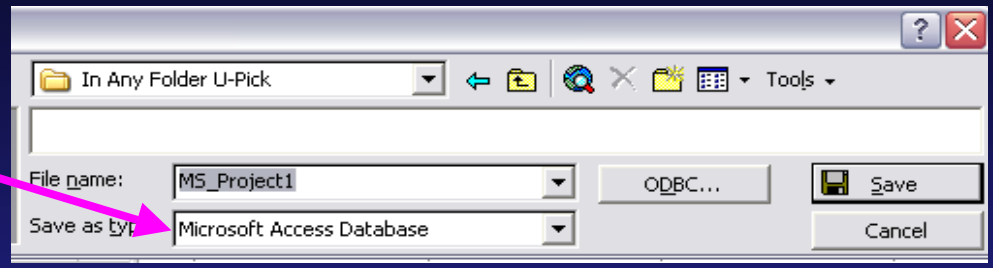
Agenda

- **Schedule Development Overview**
  - Developing the Critical Path
- **Keeping the Schedule Simple**
  - Limiting the use of Milestones, Summary Activities, and Constraints
  - View, Table, and Filter Organization
  - Short/Descriptive Activity Names
- **Quickly Displaying MS Project Data**
  - 2 Levels of Schedule Summaries
  - Custom View Filtering
- **Calculating Earned Value**
  - Managing Front & Back Loaded Schedules
  - Calculating Data in MS Project
- **Cool Tricks**
  - Numbering Schedule Data Labels using MS Excel
  - Manipulating Task Descriptions using MS Excel

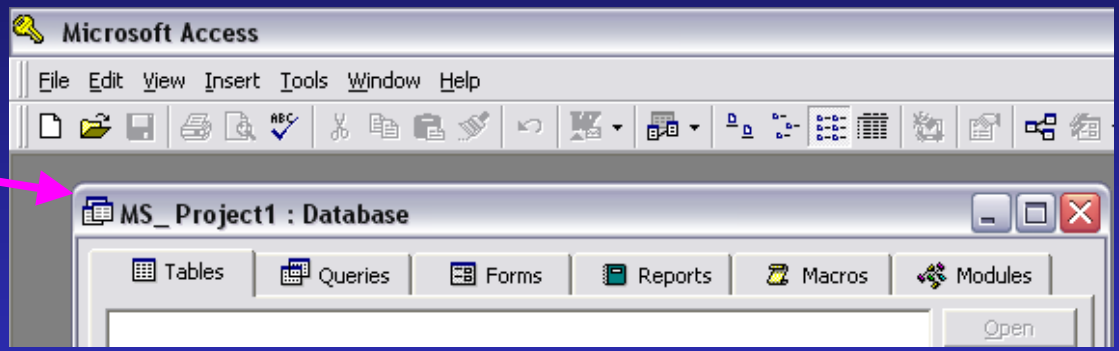
Cool Tricks

Restoring MS Project Database Using MS Access

1. Save Project File As:

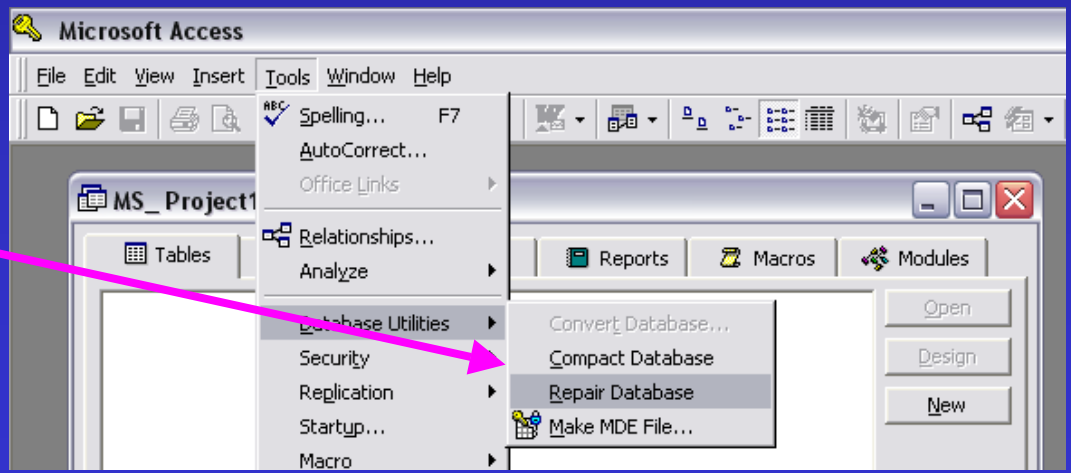


2. Open File in Access



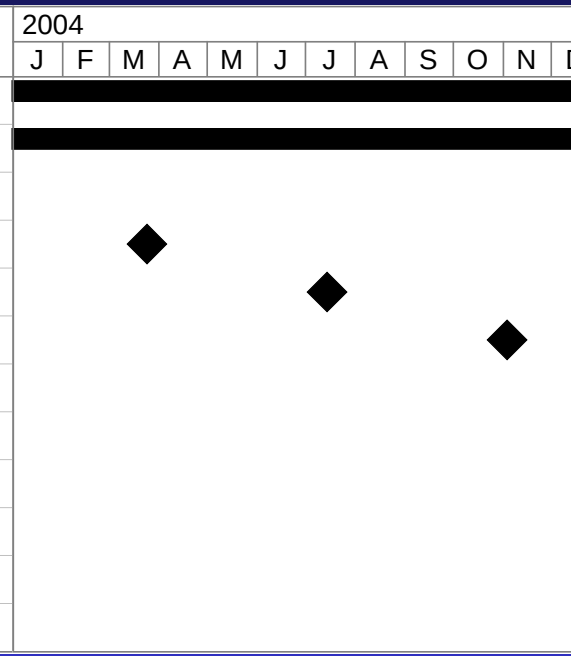
3. Run Database Utilities:

Compact Database & Repair Database



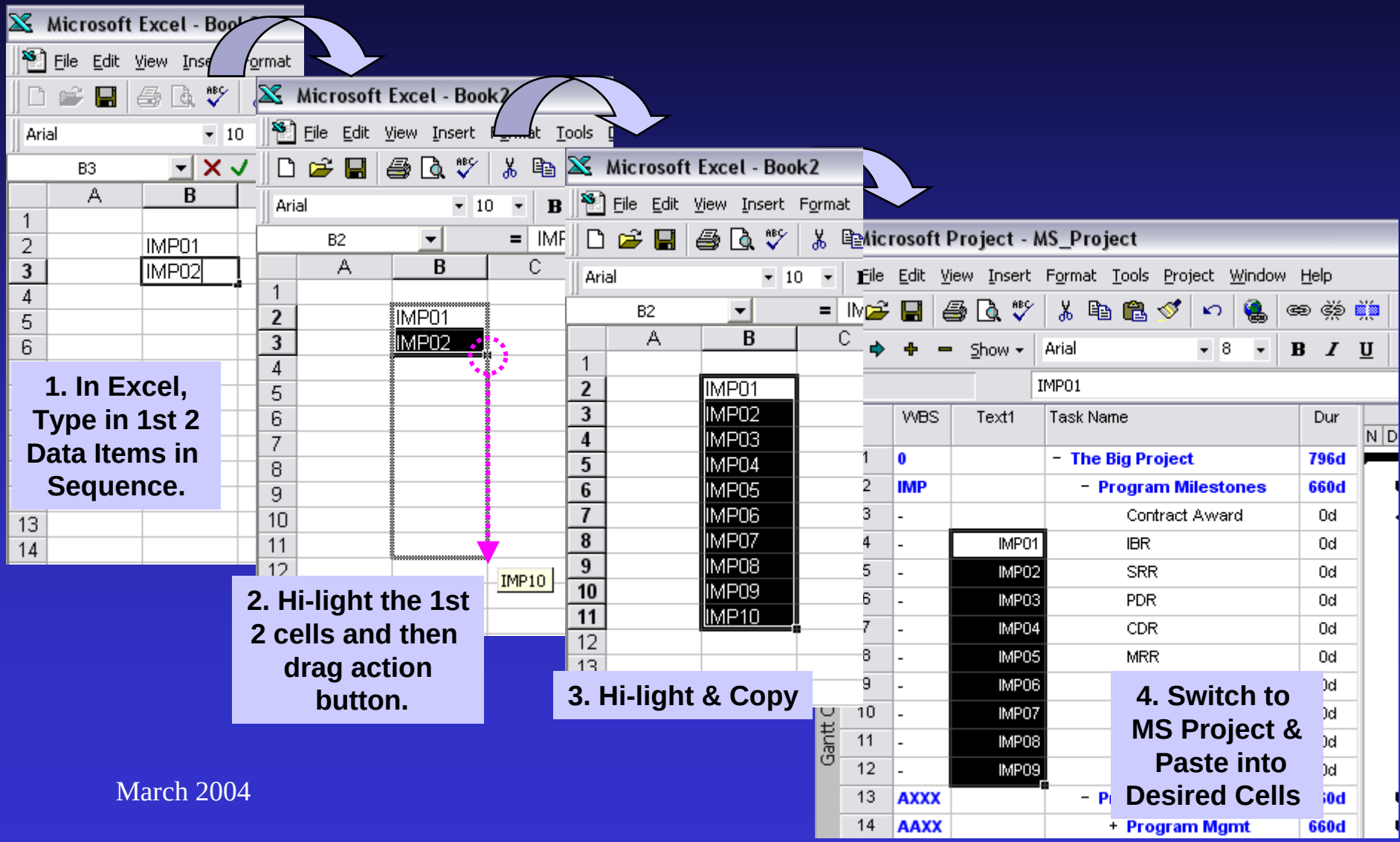
Cool Tricks
Numbering Data

ID	IMP	Task Name	Dur	Start	Finish
1		**The Big Project**	**796d**	**10/29/03**	**11/15/06**
2		**Program Milestones**	**660d**	**1/1/04**	**7/12/06**
3		Contract Award	0d	1/1/04	1/1/04
4	IMP01	IBR	0d	3/24/04	3/24/04
5	IMP02	SRR	0d	7/14/04	7/14/04
6	IMP03	PDR	0d	11/3/04	11/3/04
7	IMP04	CDR	0d	2/23/05	2/23/05
8	IMP05	MRR	0d	5/4/05	5/4/05
9	IMP06	TRR	0d	7/13/05	7/13/05
10	IMP07	1st Del	0d	10/5/05	10/5/05
11	IMP08	Lot 1 Del	0d	2/22/06	2/22/06
12	IMP09	Lot 2 Del	0d	7/12/06	7/12/06



Cool Tricks

Numbering Data

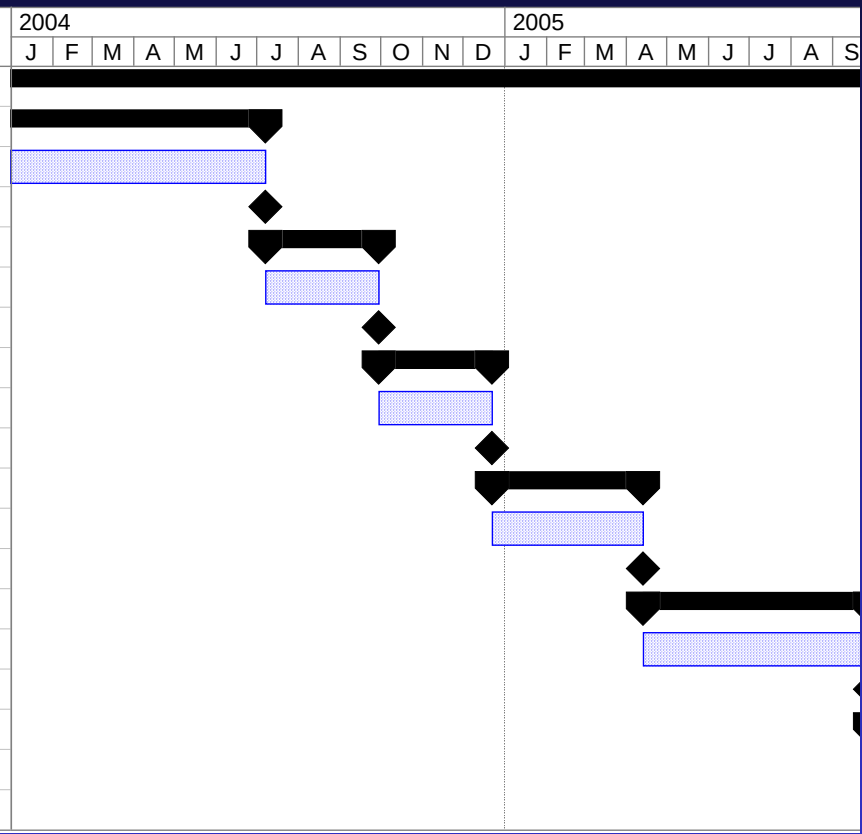


March 2004

Cool Tricks

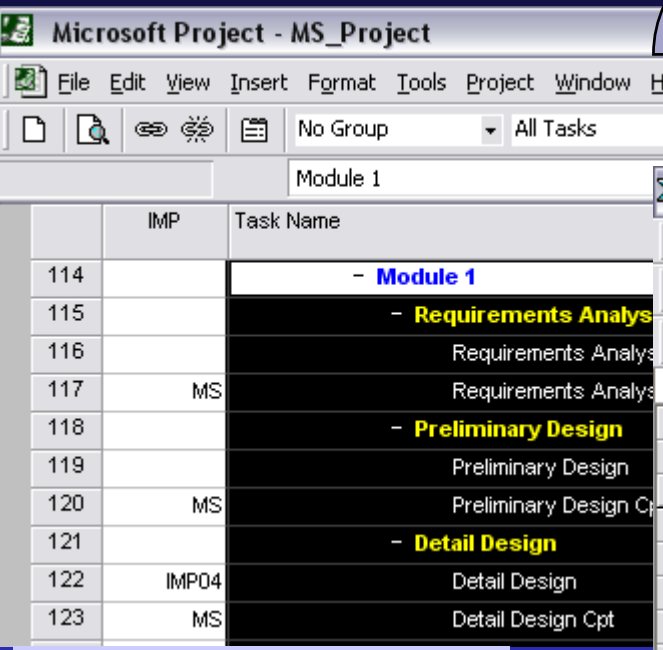
Manipulating Task Descriptions

ID	Task Name	Dur	Start
114	**Wig Mod 1-Module 1**	**515d**	**1/1/04**
115	**Wig Mod 1-Requirements Analysis**	**135d**	**1/1/04**
116	Wig Mod 1-Requirements Analysis	135d	1/1/04
117	Wig Mod 1-Requirements Analysis Cpt	0d	7/7/04
118	**Wig Mod 1-Preliminary Design**	**60d**	**7/8/04**
119	Wig Mod 1-Preliminary Design	60d	7/8/04
120	Wig Mod 1-Preliminary Design Cpt	0d	9/29/04
121	**Wig Mod 1-Detail Design**	**60d**	**9/30/04**
122	Wig Mod 1-Detail Design	60d	9/30/04
123	Wig Mod 1-Detail Design Cpt	0d	12/22/04
124	**Wig Mod 1-Drafting & Engineering Release**	**80d**	**12/23/04**
125	Wig Mod 1-Drafting & Engineering Release	80d	12/23/04
126	Wig Mod 1-Drafting & Engineering Release C	0d	4/13/05
127	**Wig Mod 1-Design Verification**	**120d**	**4/14/05**
128	Wig Mod 1-Design Verification	120d	4/14/05
129	Wig Mod 1-Design Verification Cpt	0d	9/28/05
130	**Wig Mod 1-Design Update & Lot 2 Eng Releas**	**60d**	**9/29/05**
131	Wig Mod 1-Design Update & Lot 2 Eng Rele	60d	9/29/05
132	Wig Mod 1-Design Update & Lot 2 Eng Rel C	0d	12/21/05

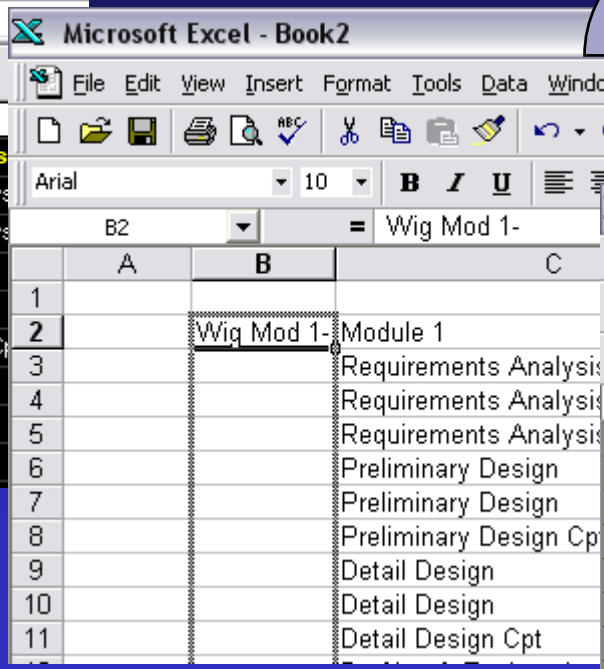


Cool Tricks

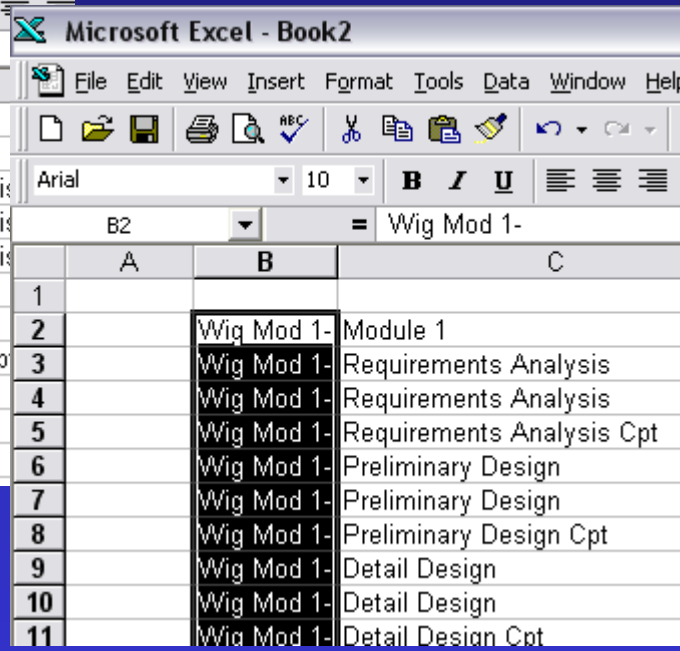
Manipulating Task Descriptions



1. Copy Text From Project To Excel



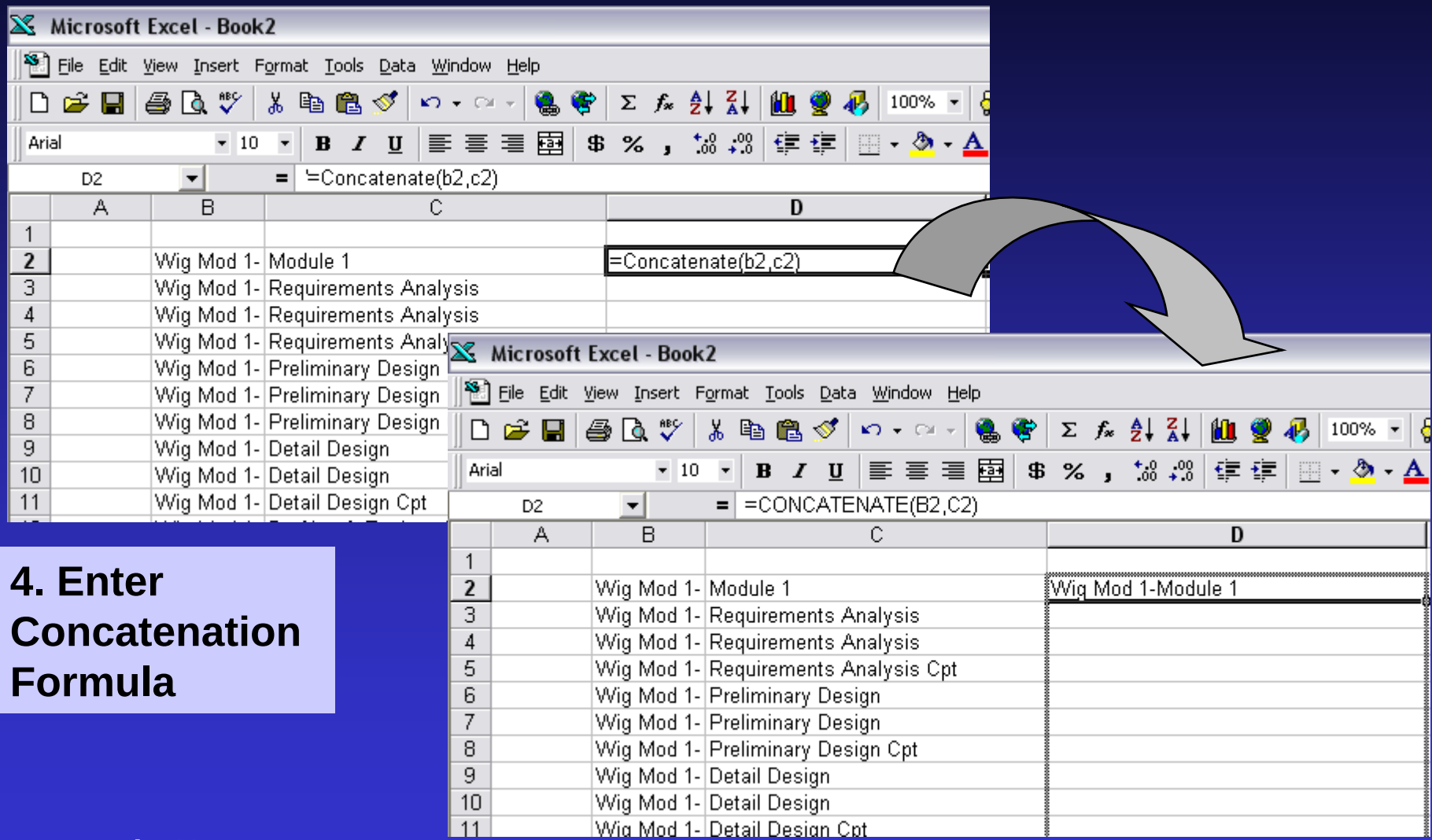
2. Type Label in cell next to copied text.



3. Fill Down

Cool Tricks

Manipulating Task Descriptions Con't



4. Enter Concatenation Formula

Cool Tricks

Manipulating Task Descriptions Con't

Microsoft Excel - Book2

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U 100%

D2 = =CONCATENATE(B2,C2)

	A	B	C	D
1				
2		Wig Mod 1-	Module 1	Wig Mod 1-Module 1
3		Wig Mod 1-	Requirements Analysis	Wig Mod 1-Requirements Analysis
4		Wig Mod 1-	Requirements Analysis	Wig Mod 1-Requirements Analysis
5		Wig Mod 1-	Requirements Analysis Cpt	Wig Mod 1-Requirements Analysis Cpt
6		Wig Mod 1-	Preliminary Design	Wig Mod 1-Preliminary Design
7		Wig Mod 1-	Preliminary Design	Wig Mod 1-Preliminary Design
8		Wig Mod 1-	Preliminary Design Cpt	Wig Mod 1-Preliminary Design Cpt
9		Wig Mod 1-	Detail Design	Wig Mod 1-Detail Design
10		Wig Mod 1-	Detail Design	Wig Mod 1-Detail Design
11		Wig Mod 1-	Detail Design Cpt	Wig Mod 1-Detail Design Cpt

5. Fill Down

Microsoft Project - MS_Project

File Edit View Insert Format Tools Project Window Help

No Group All Tasks

GizmoFlotchy Dev

	Task Name	Dur
114	– **Wig Mod 1-Module 1**	**515d**
115	– **Wig Mod 1-Requirements Analysis**	**135d**
116	Wig Mod 1-Requirements Analysis	135d
117	Wig Mod 1-Requirements Analysis Cpt	0d
118	– **Wig Mod 1-Preliminary Design**	**60d**
119	Wig Mod 1-Preliminary Design	60d
120	Wig Mod 1-Preliminary Design Cpt	0d
121	– **Wig Mod 1-Detail Design**	**60d**
122	Wig Mod 1-Detail Design	60d
123	Wig Mod 1-Detail Design Cpt	0d

6. Hi-light & Copy/Paste Back into Project File

The End

NORTHROP GRUMMAN

Good Practice

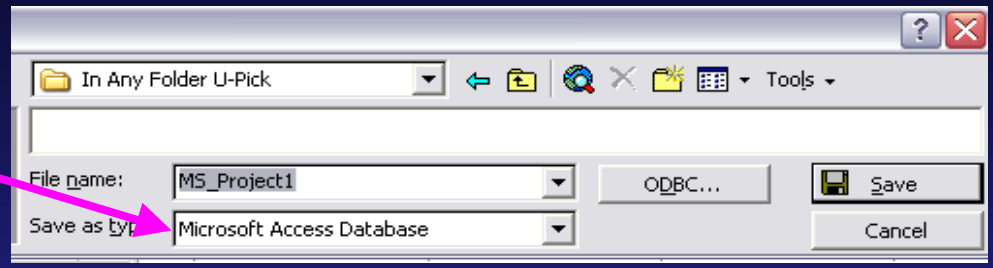
Restoring MS Project Database Using MS Access

- Like Other Databases, Corruption Happens When Least Expected.
- Back Up Files Regularly
- It Might Help to Use MS Access Compact & Repair Utility… No Guarantees

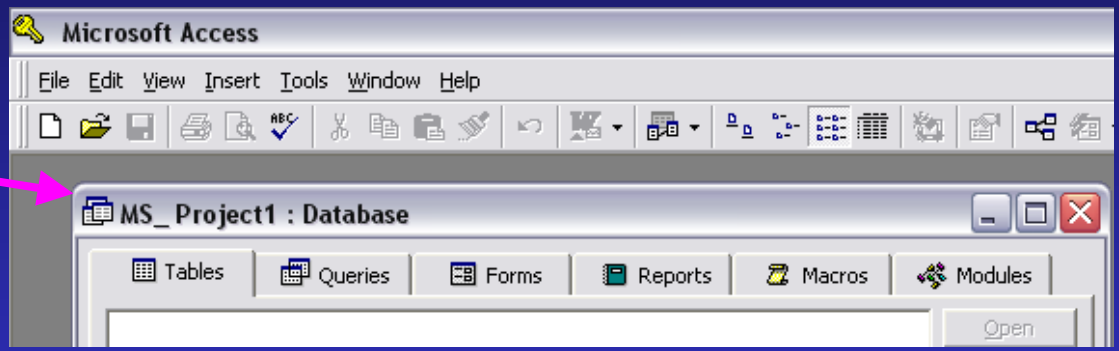
Good Practice

Restoring MS Project Database Using MS Access

1. Save Project File As:

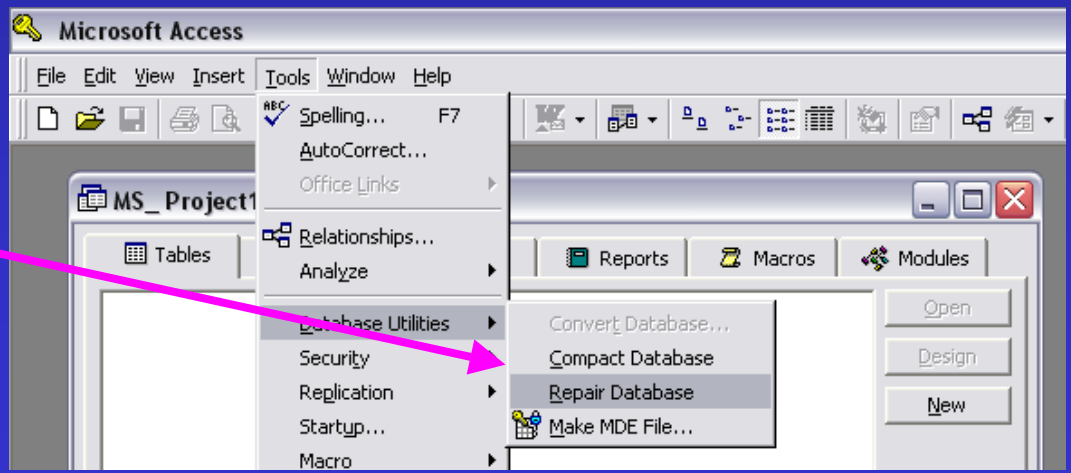


2. Open File in Access



3. Run Database Utilities:

Compact Database & Repair Database

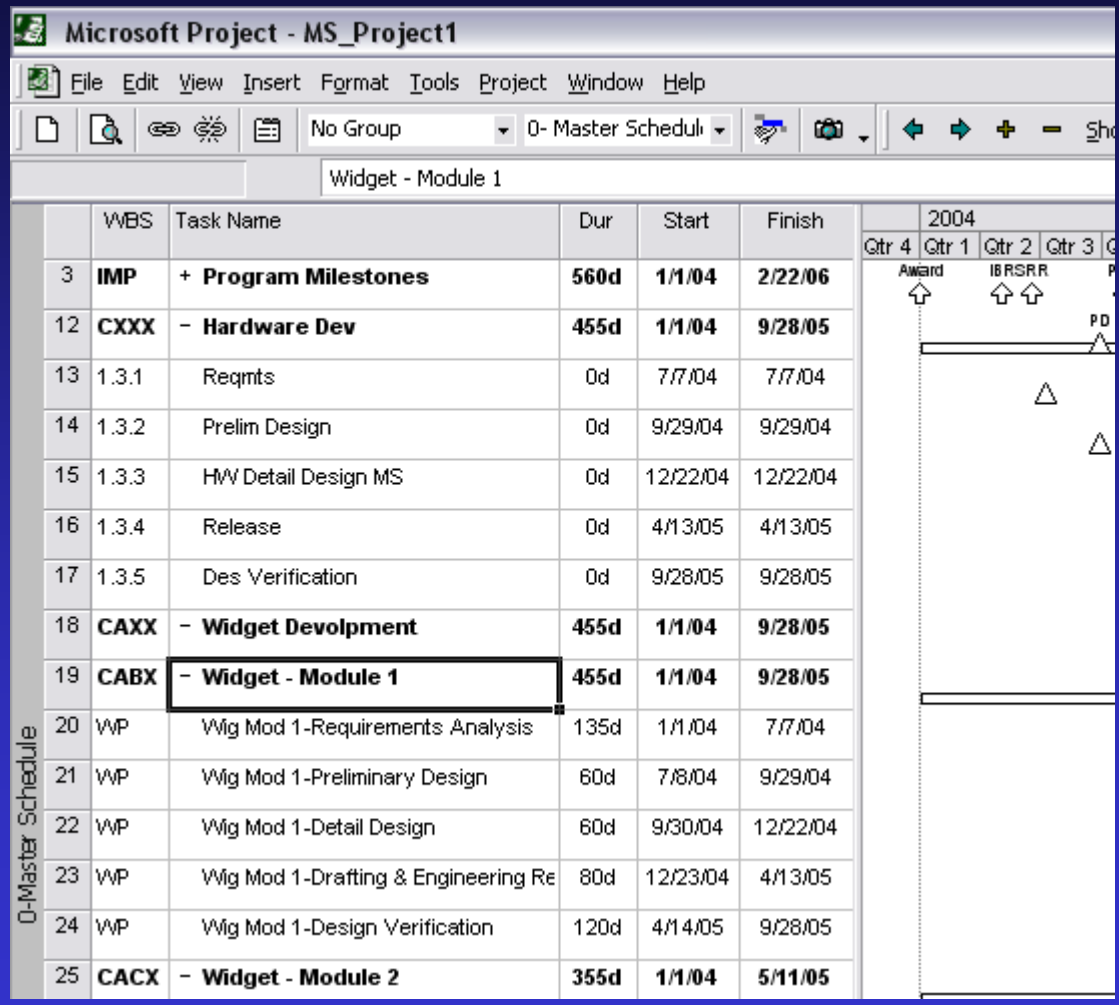


Good Practice Con't

Restoring MS Project Database Using MS Access

4. Re-open Newly Created Database file in MS Project

5. Re-Save File as MS Project Once Again.



	WBS	Task Name	Dur	Start	Finish
3	IMP	+ Program Milestones	560d	1/1/04	2/22/06
12	CXXX	− Hardware Dev	455d	1/1/04	9/28/05
13	1.3.1	Reqmts	0d	7/7/04	7/7/04
14	1.3.2	Prelim Design	0d	9/29/04	9/29/04
15	1.3.3	HW Detail Design MS	0d	12/22/04	12/22/04
16	1.3.4	Release	0d	4/13/05	4/13/05
17	1.3.5	Des Verification	0d	9/28/05	9/28/05
18	CAXX	− Widget Devolpment	455d	1/1/04	9/28/05
19	CABX	− Widget - Module 1	455d	1/1/04	9/28/05
20	WP	Wig Mod 1-Requirements Analysis	135d	1/1/04	7/7/04
21	WP	Wig Mod 1-Preliminary Design	60d	7/8/04	9/29/04
22	WP	Wig Mod 1-Detail Design	60d	9/30/04	12/22/04
23	WP	Wig Mod 1-Drafting & Engineering Re	80d	12/23/04	4/13/05
24	WP	Wig Mod 1-Design Verification	120d	4/14/05	9/28/05
25	CACX	− Widget - Module 2	355d	1/1/04	5/11/05